
Необычные браузерные API
Саша Шинкевич (@neesoglasnaja)
Gravity Falls © Disney





Кто я?

- Верстала ещё на таблицах
- jQuery, VanillaJS, AngularJS, React, Angular и Vue.js
- И Node.js
- ~~Счастливая безработная~~
- Engineering Manager в Bravado
- Women Techmakers Ambassador









Что же такое эти ваши «браузерные API»?

В браузере есть только...





Браузерные API

- Background Fetch API
- Background Tasks
- Barcode Detection API
- Battery API
- Beacon
- Bluetooth API
- Broadcast Channel API
- CSS Counter Styles
- CSS Font Loading API
- CSS Painting API
- CSS Typed Object Model API
- CSSOM
- Canvas API
- Channel Messaging API
- Clipboard API
- Console API
- Contact Picker API
- Content Index API
- Credential Management API
- DOM
- Encoding API
- Encrypted Media Extensions
- Fetch API
- File System API
- File System Access API
- Frame Timing API
- Fullscreen API
- Gamepad API
- Geolocation API
- HTML Drag and Drop API
- HTML Sanitizer API
- High Resolution Time
- History API
- Image Capture API
- IndexedDB
- Intersection Observer API
- Long Tasks API
- Media Capabilities API
- Media Capture and Streams
- Media Session API
- Media Sour… nsions
- MediaS… ng
- Naviga…
- Networ… PI
- Pa…





- Presentation API
- Proximity Events
- Push API
- Resize Observer API
- Resource Timing API
- Screen Capture API
- Screen Wake Lock API
- Sensor API
- Server Sent Events
- Service Workers API
- Storage
- Storage Access API
- Streams
- Touch Events
- URL API
- Vibration API
- Visual Viewport
- Web Animations
- Web Audio API
- Web Authentication API
- Web Crypto API
- Web MIDI API
- Web Notifications
- Web Speech API
- Web Storage API
- Web Workers API
- WebGL
- WebHID API
- WebRTC
- WebVR API
- WebVTT
- WebXR Device API
- Websockets API
- XMLHttpRequest

Web APIs | MDN



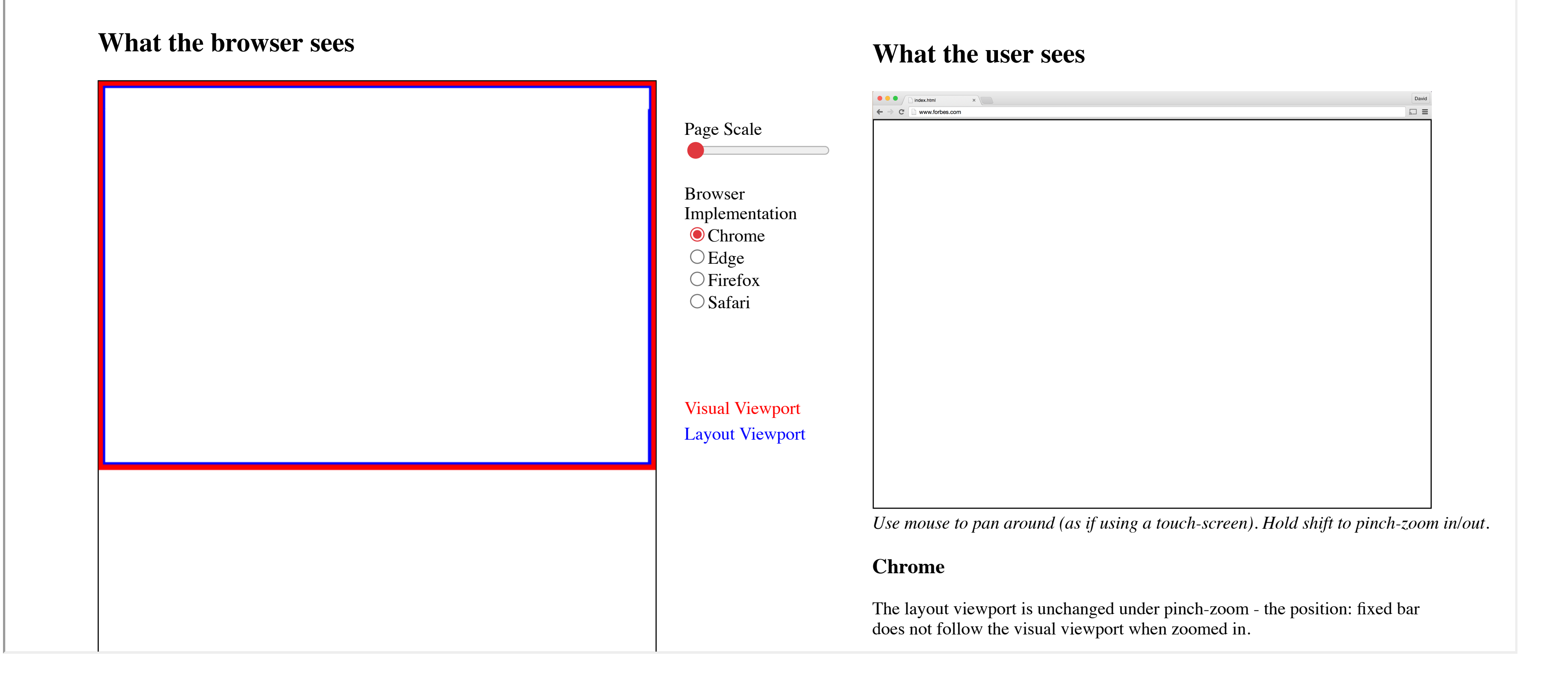
Манипуляции DOM и стилями


6
Как узнать, что пользователь
«зумил» страницу?

HTML CSS JS Result

Resources 1× 0.5× 0.25× Rerun





Visual vs. Layout Viewport Demo
Use the viewport on the right to scroll and zoom around. The viewport on the left displays how the browser sees the two viewports. Note how the position: fixed navbar at the top behaves under pinch-zoom between implementations. Disclaimer: This is the result of my research and a crude demo, the behavior for implementations (particularily non-Chrome) may not capture all their subtleties.
What the browser sees
Page Scale
Browser Implementation
Chrome
Edge
Firefox
Safari
Visual Viewport
Layout Viewport
What the user sees
index.html
www.forbes.com
David
Use mouse to pan around (as if using a touch-screen). Hold shift to pinch-zoom in/out.
Chrome
The layout viewport is unchanged under pinch-zoom - the position: fixed bar does not follow the visual viewport when zoomed in.



VisualViewport API

```
VisualViewport = {
  // Read-only
  offsetLeft
  offsetTop
  pageLeft
  pageTop
  width
  height
  scale
}
```

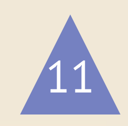
```
// Как получить значение зума*
const scale = VisualViewport.scale
```

"Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum." "Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum." "Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum." "Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum." "Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.

Disappears when the page is zoomed in



Example with hide on zoom



VisualViewport API

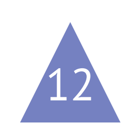
Usage % of all users ?

Global 94.31%

Current aligned | Usage relative | Date relative | Filtered | All

Chrome	Edge *	Safari	Firefox	Opera	Chrome for Android	Safari on iOS *	Samsung Internet	Opera Mini *	UC Browser for Android
103						14.8			
104	104		104			15.5			
105	105	15.6	105	90		15.6			
106	106	16.0	106	91	106	16.0	18.0	all	13.4
107		16.1	107			16.1			
108		TP	108						
109									

Caniuse – VisualViewport API



Манипуляции DOM и стилями

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- CSS Painting API
- CSS Typed OM
- CSSOM
- HTML Drag and Drop API
- Intersection Observer API
- Page Visibility API
- Pointer events
- Pointer Lock API
- Resize Observer API
- Touch events
- Visual Viewport API



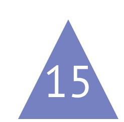
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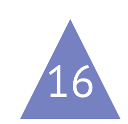
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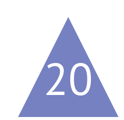
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Передача данных и состояние сети


19
Как общаться между вкладками,
не используя сеть?
5



Broadcast Channel API

Web APIs More APIs

Demo - BroadcastChannel

Open this page in another *tab*, *window* or *iframe* to chat with them.

Type your message Send

Web APIs More APIs

Demo - BroadcastChannel

Open this page in another *tab*, *window* or *iframe* to chat with them.

Type your message Send



Broadcast Channel API

```
const bc = new BroadcastChannel('test_channel')

bc.postMessage('This is a test message.')

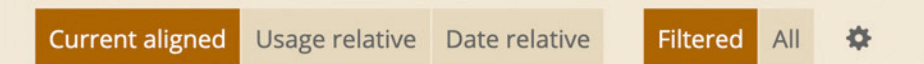
bc.onmessage = function (ev) { ... }

bc.close();
```

BroadcastChannel - LS

Usage | % of all users

Global 92.79%


BroadcastChannel allows scripts from the same origin but other browsing contexts (windows, workers) to send each other messages.

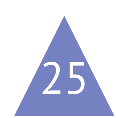
Current aligned | Usage relative | Date relative | Filtered | All

Chrome	Edge *	Safari	Firefox	Opera	Chrome for Android	Safari on iOS *	Samsung Internet	Opera Mini *	UC Browser for Android
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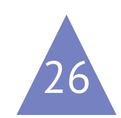
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- Streams API
- Web Periodic Background Synchronization API
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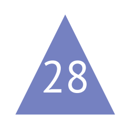
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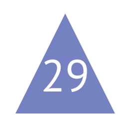
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Графика и медиа

Можно ли распознать QR-код из браузера?



Считываем код телефоном


33



Barcode Detection API

```
const barcodeDetector = new BarcodeDetector();

barcodeDetector.detect(image)
  .then(barcodes => { ... })
  .catch(e => { ... });
```

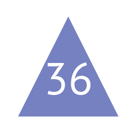
BarcodeDetector API

Usage | % of all users | ?

Global 43.81% + 29.4% = 73.21%

Current aligned | Usage relative | Date relative | Filtered | All

Chrome	Edge *	Safari	Firefox	Opera	Chrome for Android	Safari on iOS *	Samsung Internet	Opera Mini *	UC Browser for Android
[2] 103						14.8			
[2] 104	[1] 104		104			15.5			
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[2] 109									



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- Web Video Text Tracks Format
- ~~WebVR API~~ WebXR Device API



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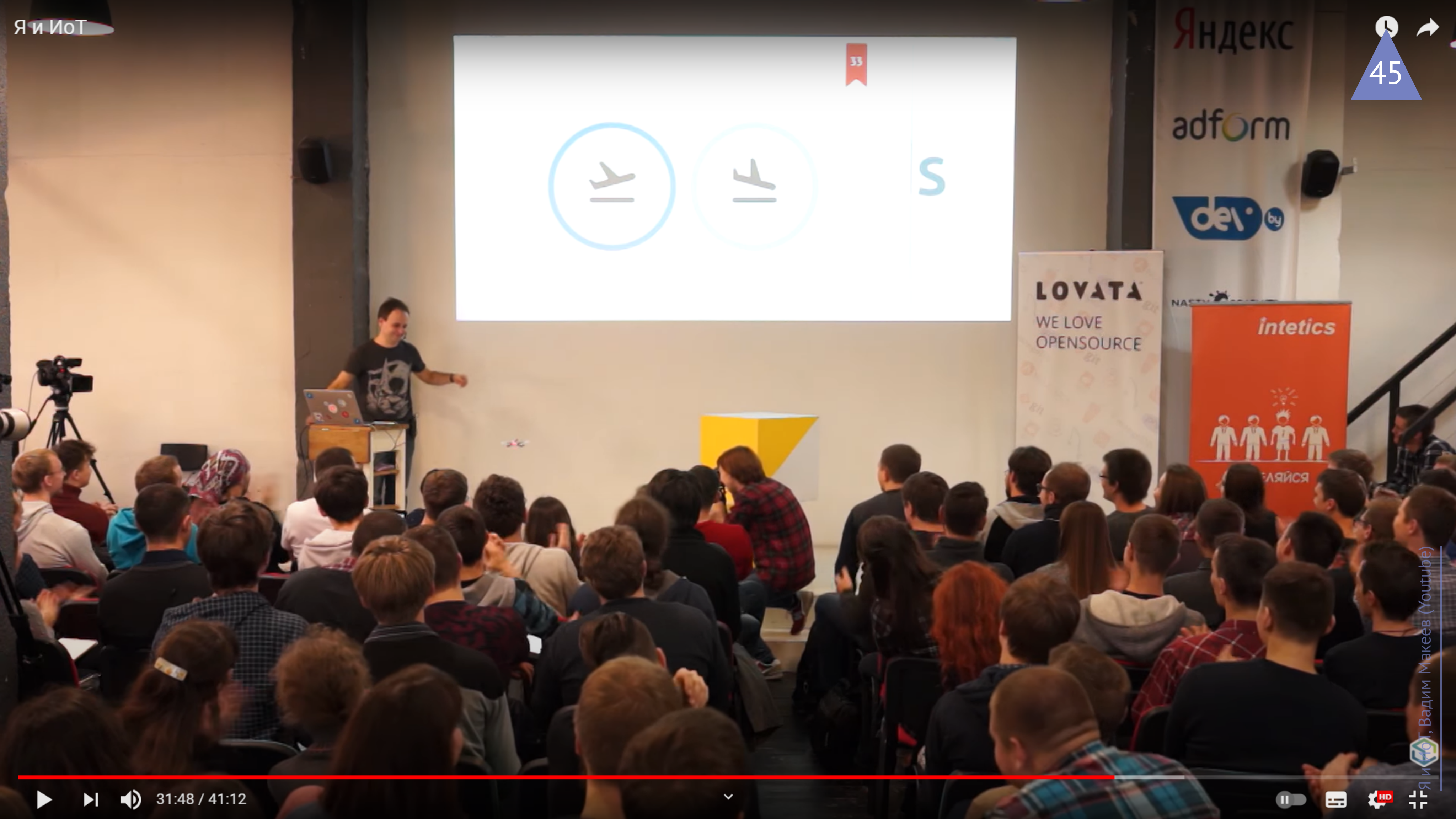


Графика и медиа

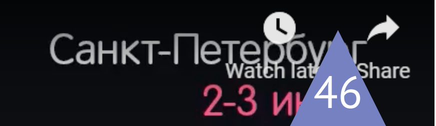
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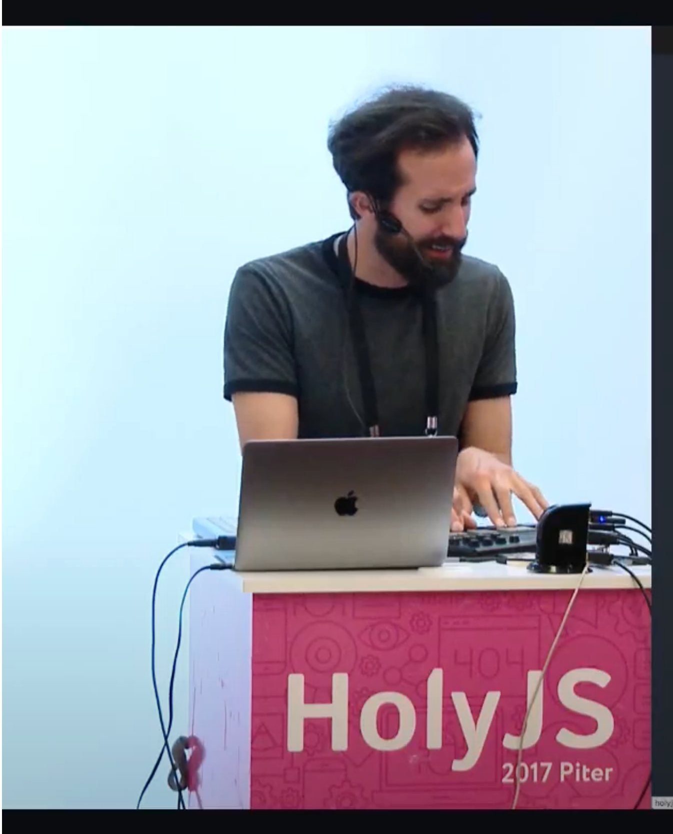


Управление устройствами


Я и ИоТ
45
33
S
Яндекс
adform
dev by
LOVATA
WE LOVE
OPENSOURCE
intetics
31:48 / 41:12
Я и ИоТ, Вадим Макеев (Youtube)

George Mandis — Make More Than Music with Tiny Computers, JavaScript and MIDI





WEBRTC SYMPHONY

INTERACTIVE PIANO RECITAL

CONDUCTOR'S SEAT

10 IN THE ORCHESTRA

holyjs.mand.is/ws1/conductor

MORE VIDEOS

9:49 / 56:35











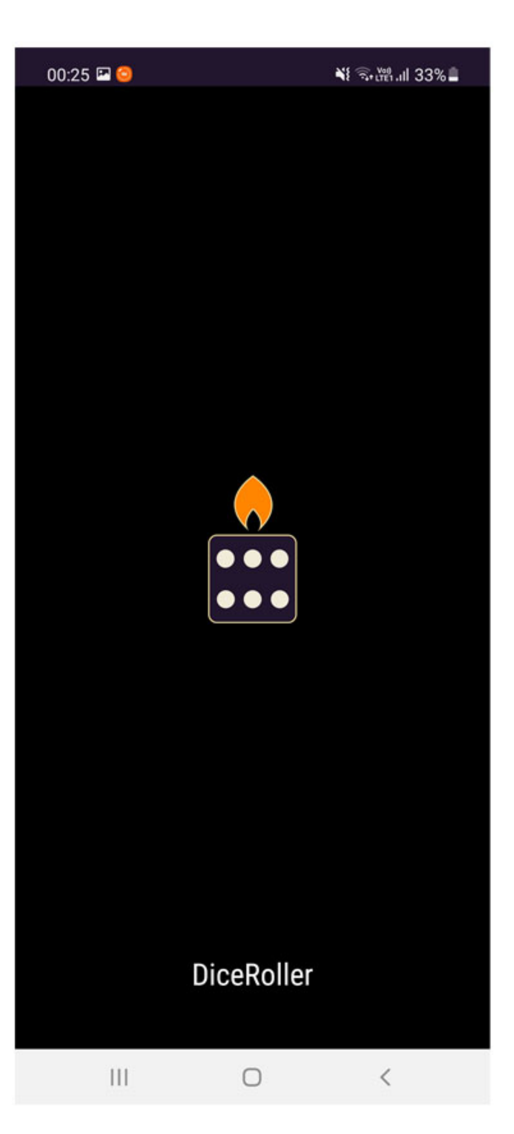


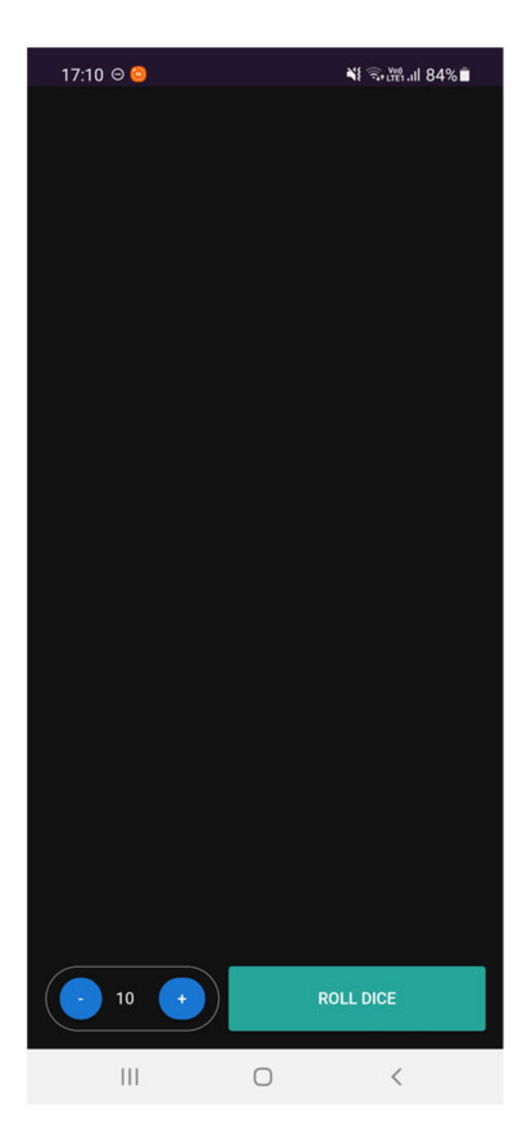


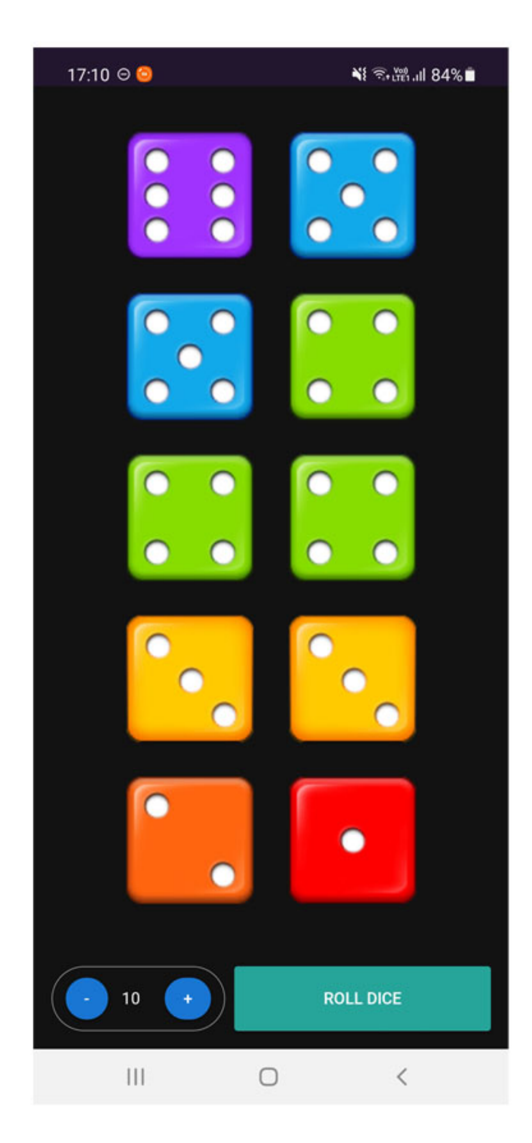

47
Как заставить телефон делать
«вж-вж-вж-вж»?
DAWN
Pitt
CE



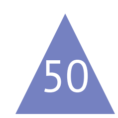
Бросим кубики


00:25
33%
DiceRoller


17:10
84%
-
10
+
ROLL DICE


17:10
84%
-
10
+
ROLL DICE


49



Vibration API

```
if ("vibrate" in navigator) {
  ...
  navigator.vibrate(200) // одиночная вибрация
  navigator.vibrate([100,30,100,30,...]) // последовательность
  ...
}
```

Vibration API - REC


Method to access the vibration mechanism of the hosting device.

Usage | % of all users

Global	79.26%
unprefixed:	79.23%

Current aligned | Usage relative | Date relative | Filtered | All

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Управление устройствами

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- Gamepad API
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- Notifications API
- Permissions API
- Push API

- ~~Battery Status API~~ ~~Proximity Events~~
- Sensor APIs
- Vibration API
- Web Bluetooth API
- WebHID API
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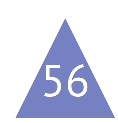
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- ~~Battery Status API~~ ~~Proximity Events~~
- Sensor APIs
- Vibration API
- Web Bluetooth API
- WebHID API
- Web MIDI API



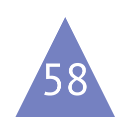
Управление устройствами

- Clipboard API
- Gamepad API
- Geolocation API
- Notifications API
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Хранение и управление данными


60
Как оградить сайт от «опасного кода»
в комментариях?
Disney XD

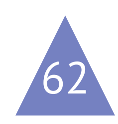
sanitize-html DT

2.4.0 • Public • Published 3 months ago

Weekly Downloads

1,056,527

sanitize-html



Запретим опасный код



Sanitizer API

Usage % of all users ?

Global 61.58%

Current aligned | Usage relative | Date relative | Filtered | All

Chrome	Edge *	Safari	Firefox	Opera	Chrome for Android	Safari on iOS *	Samsung Internet	Opera Mini *	UC Browser for Android
[1] 103						14.8			
[1] 104	[1] 104		[2] 104			15.5			
105	105	15.6	[2] 105	[1] 90		15.6			
106	106	16.0	[2] 106	[1] 91	106	16.0	18.0	all	13.4
107		16.1	[2] 107			16.1			
108		TP	[2] 108						
109									


Хочу доступ к контактам,
как в мобильных приложениях

10:06

Contact Picker API Demo

Access to the user's contacts has been a feature of native apps since (almost) the dawn of time. The **Contact Picker API** is a new, on-demand picker that allows users to select an entry or entries from their contact list and share limited details of the selected contact(s) with a website. It allows users to share only what they want, when they want, and makes it easier for users to reach and connect with their friends and family.

- [x] Multiple results?
- [x] Include name?
- [x] Include email addresses?
- [x] Include telephone numbers?

This demo **does not** share or upload your contacts. It simply shows them on screen, and no contact data is transferred off this device.

Open contact picker

Results

See A Contact Picker for the Web for complete details on the API, including use cases, how it was designed, and how to use it.

Check out the source for this sample, or remix it on Glitch.

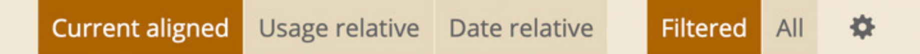


Contact Picker API

```
const supported = ('contacts' in navigator
   && 'ContactsManager' in window);

const props = ['name', 'email', 'tel', 'address', 'icon'];
const opts = { multiple: true };

navigator.contacts.select(props, opts)
  .then(contacts => { ... })
  .catch(e => { ... })
```

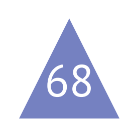


Usage % of all users ?

Global 43.81%

Current aligned | Usage relative | Date relative | Filtered | All

Chrome	Edge *	Safari	Firefox	Opera	Chrome for Android	Safari on iOS *	Samsung Internet	Opera Mini *	UC Browser for Android
103						1 14.8			
104	104		104			1 15.5			
105	105	15.6	105	90		1 15.6			
106	106	16.0	106	91	106	1 16.0	18.0	all	13.4
107		16.1	107			1 16.1			
108		TP	108						
109									



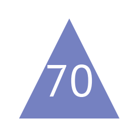
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- IndexedDB API
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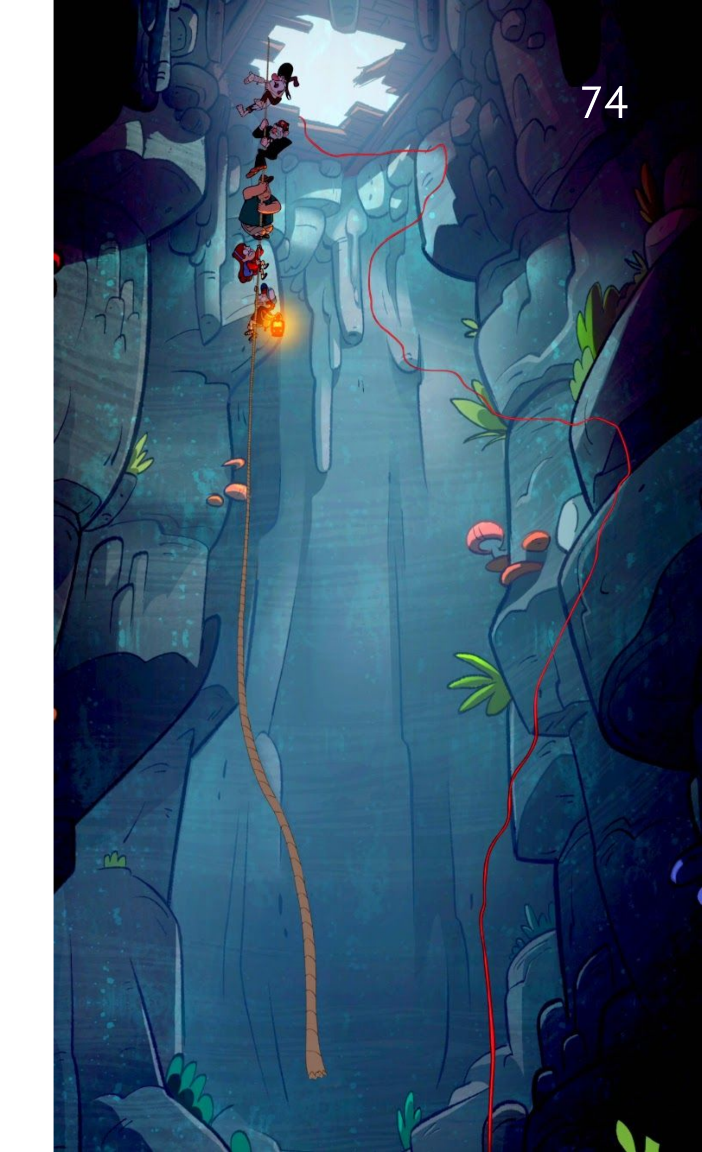
Вместо выводов



– Нельзя поверить в невозможное!

– Просто у тебя мало опыта, – заметила Королева. – В твоем возрасте я уделяла этому полчаса каждый день! В иные дни я успевала поверить в десяток невозможностей до завтрака!

Льюис Кэрролл, «Алиса в стране чудес»




HTML
JS
CSS


WA
WEBASSEMBLY

bit.ly/FC2022-WebAPIs

Саша Шинкевич (@neesoglasnaja)

